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Conference Abstract

French Information System on Water Withdrawals: Challenges of a Data Reuse Project

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Abstract

In France, a national information system on water withdrawals called Banque Nationale des Prélèvements en Eau (BNPE) has been set up to comply with the Water Framework Directive (WFD) and national Law on Water and Aquatic Environments. The aims are to centralize information on the volume of water withdrawals and to share it on the website www.bnpe.eaufrance.fr, where data can both be viewed and exported without restriction. BNPE shares data in a form that can be used for water management studies, scientific research, or to assess impacts on aquatic habitats.

THE BNPE PROJECT SCOPE

The BNPE is a part of the French Water Information System (SIE), set up to share public data on water and aquatic environments*1. The BNPE project is managed by the French Biodiversity Agency (AFB) and the Adour-Garonne Water Agency, and is supervised by the French Ministry in charge of Environment. Database and related tools were developed with the French Geological Survey (BRGM).

To achieve its goals, the project mainly reuses information from Water Agencies, based on taxes collected using the 'taker-payer' principle: persons who take water from the natural environment have to pay. Data on water withdrawals disseminated by BNPE can now be

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reused by land managers, decision-makers and researchers due to the single access of these data for all of France (metropolitan and overseas). These data are:

- Detailed data of water withdrawn: volume of water withdrawn (m^3), geographic coordinates of the water pump, water uses (e.g. energy, irrigation, drinking water supply, industries), type of water (groundwater, surface water: river, lake or estuary),
- Aggregated data: synthesis is available by year, geography, use or type of water.

In 2018, BNPE shared data from 2008 to 2016.

CHALLENGES OF CENTRALIZATION AND REUSE OF DATA : FEEDBACK FROM THE PROJECT

The BNPE project faced the challenges of centralization and reuse of data at a national level by making the data available to everyone. The reuse of data derived from taxes due to environmental issues is not easy, even in an open data context. We identified two main issues:

The data standardization issue

The stakeholders of the project set up a dictionary to define *2 common repositories and a data exchange format. This work was done with the collaboration of the Sandre*3, the French National Service for Water Data and Common Repositories Management. However, the definition of the standard is too broad and producers encounter issues in standardizing their data. This project shows us the need to define a limited core of data concepts to share, which are very well defined and cannot be misinterpreted. BNPE also focuses on the importance of using concepts that already exist in the producer's information system. Centralization and enrichment of datasets are two additional steps that need to be differentiated for a project to succeed.

The challenge of reusing data

The project is confronting issues related to assembling a relevant dataset of water withdrawals. Data from taxes paid by water takers lack key environmental information that limits its use for environmental studies. For example, only 50% of water withdrawn is linked to a specific river, lake or groundwater source. Moreover, because current water use datasets are derived from taxes on withdrawals greater than 7000 m^3 per year, the data are missing for some withdrawals. AFB is studying additional data sources to complete the dataset (e.g., local authorities, crowdsourcing, spatial joining).

Keywords

data reuse, data standard, project feedback, open data, information system

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Endnotes

*1 http://www.eaufrance.fr/

*2 http://sandre.eaufrance.fr/ftp/documents/fr/ddd/prl/2.1/sandre_dictionnaire_PRL_2.1.pdf

*3 http://www.sandre.eaufrance.fr/IMG/pdf/PlaquetteSandreEn.pdf?lang=en